<table>
<thead>
<tr>
<th>Language</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>de</td>
<td>1</td>
</tr>
<tr>
<td>en</td>
<td>11</td>
</tr>
<tr>
<td>nl</td>
<td>20</td>
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<td>fr</td>
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<td>da</td>
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<td>48</td>
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<tr>
<td>no</td>
<td>57</td>
</tr>
<tr>
<td>sv</td>
<td>66</td>
</tr>
<tr>
<td>cs</td>
<td>75</td>
</tr>
</tbody>
</table>
1 Information about the documentation

1.1 Conventions

1.1.1 Warning signs

The following warning signs are used:

- **DANGER!** Draws attention to imminent danger that will lead to serious personal injury or fatality.
- **WARNING!** Draws attention to a potentially dangerous situation that could lead to serious personal injury or fatality.
- **CAUTION!** Draws attention to a potentially dangerous situation that could lead to slight personal injury or damage to the equipment or other property.

1.1.2 Symbols

The following symbols are used:

- 📖 Read the operating instructions before use.

1.1.3 Typographical emphasis

The following typographic features are used to emphasize important passages in this technical documentation:

- 📕 These numbers refer to the corresponding illustrations.

1.2 About this documentation

- It is essential that the operating instructions are read before initial operation.
- **The information provided in the detailed operating instructions installed in the tool** as well as the supplements and updates provided at [www.hilti.com](http://www.hilti.com) must also be observed.
- Always keep these operating instructions together with the tool.
- Ensure that the operating instructions are with the tool when it is given to other persons.

1.3 Product information

Hilti products are designed for professional use and may be operated, serviced and maintained only by trained, authorized personnel. This personnel must be informed of any particular hazards that may be encountered. The product described and its ancillary equipment may present hazards when used incorrectly by untrained personnel or when used not as directed.

- The type designation and serial number are printed on the type identification plate.
- Make a note of this data in the following table and always refer to it when making an enquiry to your Hilti representative or Hilti Service Center.

**Product information**  →  page 11

<table>
<thead>
<tr>
<th>Pipe laser</th>
<th>PP 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation</td>
<td>02</td>
</tr>
<tr>
<td>Serial no.</td>
<td></td>
</tr>
</tbody>
</table>

2 Safety

2.1 Safety instructions

2.1.1 Basic information concerning safety

In addition to the safety rules listed in the individual sections of these operating instructions, the following rules must be strictly observed at all times. The product and its ancillary equipment may present hazards when used incorrectly by untrained personnel or when used not as directed.

- Keep all safety instructions and information for future reference.
Stay alert, watch what you are doing and use common sense when working with the product. Do not use the product while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating the product may result in serious personal injury.

Do not render safety devices ineffective and do not remove information and warning notices.

If the product is opened improperly, laser radiation in excess of Class 2 may be emitted. **Have the product repaired only by Hilti Service.**

Tampering with or modification of the product is not permitted.

Check that the product functions correctly each time before use.

Measurements taken through panes of glass or other objects may be inaccurate.

The measurement may be incorrect if the conditions under which the measurement is taken change rapidly, e.g. due to people walking through the path of the laser beam.

Do not point the product toward the sun or other powerful light sources.

Take the influences of the surrounding area into account. Do not use the tool where there is a risk of fire or explosion.

Observe the information printed in the operating instructions concerning operation, care and maintenance.

**2.1.2 General safety rules**

- Check the product for damage before use. Have the damage repaired by Hilti Service.
- Check the accuracy of the product after it has been dropped or subjected to other mechanical stresses.
- Although the product is designed for the tough conditions of jobsite use, as with other measuring instruments it should be treated with care.
- Products which are not in use must be stored in a dry, high place or locked away out of reach of children.
- The product is not intended for use by children.
- Observe the national health and safety requirements.

**2.1.3 Proper preparation of the working area**

- Avoid unfavorable body positions when working from ladders. Make sure you have a safe stance and that you stay in balance at all times.
- Secure the site at which you are taking measurements and take care to avoid directing the laser beam toward other persons or toward yourself.
- When the product is brought into a warm environment from very cold conditions, or vice-versa, allow it to become acclimatized before use.
- Use the product only within its specified limits.
- Keep the laser exit window clean in order to avoid measurement errors.
- Observe the accident prevention regulations applicable in your country.

**2.1.4 Working safely with laser tools**

- Laser Class 3/Class III tools may be operated only by appropriately trained persons.
- Laser beams should not be projected at eye height.
- Precautions must be taken to ensure that the laser beam does not unintentionally strike highly reflective surfaces.
- Precautions must be taken to ensure that persons do not stare directly into the beam.
- The laser beam must not be allowed to project beyond the controlled area.
- Switch the laser tool off when it is not in use.
- Store laser tools, when not in use, in places to which unauthorized persons have no access.

**2.1.5 Electromagnetic compatibility**

Although the device complies with the strict requirements of the applicable directives, Hilti cannot entirely rule out the possibility of interference to the device caused by powerful electromagnetic radiation, possibly leading to incorrect operation. Check the accuracy of the device by taking measurements by other means when working under such conditions or if you are unsure. Likewise, Hilti cannot rule out the possibility of interference with other devices (e.g. aircraft navigation equipment). The tool complies with the requirements of Class A; The possibility of interference occurring in a domestic environment cannot be excluded.

Only for Korea: This laser range meter is suitable for commercial and industrial use and for the electromagnetic radiation encountered in this field (Class A). Users must pay attention to this point and make sure that this laser range meter is not used in occupied living areas.
### 3 Description

#### 3.1 Parts, indicators and operating controls

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Remote control signal receiving window</td>
<td>8</td>
<td>Battery compartment cover lock</td>
</tr>
<tr>
<td>2</td>
<td>Warning / standby LED</td>
<td>9</td>
<td>PPA 82 battery incl. mains adaptor</td>
</tr>
<tr>
<td>3</td>
<td>Control panel</td>
<td>10</td>
<td>Plumb point</td>
</tr>
<tr>
<td>4</td>
<td>Display</td>
<td>11</td>
<td>Laser exit window</td>
</tr>
<tr>
<td>5</td>
<td>Grip</td>
<td>12</td>
<td>Remote control signal receiving window</td>
</tr>
<tr>
<td>6</td>
<td>Grip mount</td>
<td>13</td>
<td>Plumb point</td>
</tr>
<tr>
<td>7</td>
<td>PPA 84 cable connector</td>
<td>14</td>
<td>Pivot point mark</td>
</tr>
</tbody>
</table>

#### 3.2 Description

The tool is designed to be used for determining, transferring or checking alignment in the horizontal and inclined planes. The tool is a pipe laser featuring a visible laser beam. If the tool is set up outside its self-leveling range, the laser beam and the LED on the control panel blink. The direction in which the tool requires to be tilted is also shown in the display.

Three different electric power supply sources may be used. These are the PPA 82 battery (supplied as standard) or the PPA 83 battery holder or PPA 84 external 12 V connecting cable (available as accessories). The performance of the PPA 82 battery drops at low temperatures. Store the battery at room temperature. Never store it where it is exposed to the heat of the sun, on a heating unit or behind glass, e.g. at a window. Charging is stopped automatically to protect the battery when the temperature is outside the specified charging temperature range.

The tool is designed to withstand submersion to a depth of up to 5 m for a time of up to 24 hours.

#### 3.3 Buttons

<table>
<thead>
<tr>
<th>Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plumb point button</td>
</tr>
<tr>
<td>Laser beam mode button</td>
</tr>
<tr>
<td>Lock button</td>
</tr>
<tr>
<td>Target plate auto-centering button</td>
</tr>
<tr>
<td>Direction control button</td>
</tr>
<tr>
<td>Selection button</td>
</tr>
<tr>
<td>Set button</td>
</tr>
<tr>
<td>On/off button</td>
</tr>
</tbody>
</table>

#### 3.4 Information shown in the display

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Battery state of charge: 100 %" /></td>
<td>Battery state of charge: 100 %</td>
</tr>
<tr>
<td><img src="image" alt="Battery state of charge: 75 %" /></td>
<td>Battery state of charge: 75 %</td>
</tr>
<tr>
<td><img src="image" alt="Battery state of charge: 25 %" /></td>
<td>Battery state of charge: 25 %</td>
</tr>
<tr>
<td><img src="image" alt="The indicator blinks: The laser is charging with the PPA 84 connecting cable." /></td>
<td>The indicator blinks: The laser is charging with the PPA 84 connecting cable.</td>
</tr>
<tr>
<td><img src="image" alt="Laser plumb point indicator" /></td>
<td>Laser plumb point indicator</td>
</tr>
<tr>
<td><img src="image" alt="Alignment indicator" /></td>
<td>Alignment indicator</td>
</tr>
</tbody>
</table>
Self-leveling indicator
Indication in percent
Lock symbol
Electronic bubble level indicator
Laser mode display
Leveling warning
Transverse inclination warning
Beam position indicator
Beam end position, left
Beam end position, right
The tool is not ready for operation
Stabilization of the laser beam
Search in progress
Automatic alignment has ended
Error during automatic alignment

4 Technical data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength</td>
<td>633 nm (0.0000249 in)</td>
</tr>
<tr>
<td>Accuracy within the specified operating temperature range at 10 m horizontal distance</td>
<td>0.5 mm ... 0.5 mm</td>
</tr>
<tr>
<td>Accuracy within the specified operating temperature range at 33 ft horizontal distance</td>
<td>0.5 mm ... 0.5 mm</td>
</tr>
<tr>
<td>Laser class in accordance with IEC 825-1:2003</td>
<td>3 R</td>
</tr>
<tr>
<td>Laser class in accordance with CFR 21 § 1040 (FDA)</td>
<td>IIIa</td>
</tr>
<tr>
<td>Self-leveling range</td>
<td>−10 % ... 10 %</td>
</tr>
<tr>
<td>Inclination range</td>
<td>−15 % ... 40 %</td>
</tr>
<tr>
<td>Minimum inclination setting</td>
<td>0.001 %</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>−20 °C ... 50 °C</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>−4 °F ... 122 °F</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>−30 °C ... 60 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>−22 °F ... 140 °F</td>
</tr>
<tr>
<td>Weight</td>
<td>3.8 kg (8.4 lb)</td>
</tr>
</tbody>
</table>
5 Operation

5.1 Switching the tool on or off

- Press the on / off button to switch the tool on or off.

5.2 Changing the batteries

1. Turn the battery release button to the Open position and remove the battery holder.
2. Remove the used batteries and insert new ones.
3. Reinsert the battery holder.
4. Turn the battery release button to the Lock position.

5.3 Connecting the PPA 84 cable

1. Observe the following instructions before connecting the cable.

   - **Note**
     - Switch the engine off if you are using a battery installed in a motor vehicle.
     - Take care to ensure that the two terminals are connected correctly (correct polarity).
     - Switch the tool off before connecting the cable.
     - The cable is intended for connecting to a 12 V battery.

2. Connect the red clip to the positive (+) terminal.
3. Connect the black clip to the negative (-) terminal.

5.4 Charging the battery PPA 82

1. Insert the battery in the PPA 81 charging adapter.
   - Charging begins automatically.

   - **Note**
     - Charging should take place in a room where the temperature is between 10° C (50° F) and 40° C (104° F).
     - The batteries charge automatically if the tool is powered by an external battery when within the 10° C (50 °F) to 40 °C (104 °F) temperature range.

2. Connect the AC adapter to the charging adapter.
3. Plug the AC adapter into a power outlet.
4. Disconnect the charging adapter when the charging control LED lights green.
   - The charging indicator LED lights red: Charge the tool.
   - The charging indicator LED lights green: Charging has ended.
   - The charging indicator LED blinks green: An error occurred during charging.
   - The charging indicator LED blinks red: The charging cut-out has been activated. The tool cannot be used in this status.

5.5 Manual adjustment of inclination

1. Press the up / down button.
   - The laser beam moves up or down.

   - **Note**
     - Inclination can also be set directly by moving the laser beam. Check that the locking function has not been activated.

2. Press the up / down buttons at the same time to set the zero position.

   - **Note**
     - The laser beam moves immediately to the 0.000% position.

5.6 Setting the inclination automatically

1. Switch the tool on.
2. Press the Set button.
   - The value set will be shown.
3. Press the direction buttons in order to reach the correct position.
4. Press the up / down buttons to change the value.
5. Press the Set button when the value entered is correct.

5.7 Aligning the target line
   ▶ Use the direction buttons to move the laser beam horizontally to the right or left.

Note
The tool itself or the remote control unit can be used to align the target line.

5.8 Setting the beam position
1. Press the button briefly to move the laser beam slowly.
2. Press the button for longer to move the laser beam more quickly.
3. The display begins to blink when the laser reaches the farthest right or left position. If this position is reached frequently it is recommended that the tool is pivoted slightly to the left or right and the beam then realigned.

5.9 Automatic centering
   ▶ Press both direction control buttons at the same time.
      ◇ The laser beam returns to the center automatically.

5.10 Automatic alignment with the target plate
1. Set up the target plate with the reflective strips facing the laser tool.
2. Press the target plate auto-centering button.
   ◇ This function may take up to 2 minutes to start.
   ◇ The tool then searches for the target plate within its alignment range (right/left).

5.11 Selecting the laser beam mode
1. Press the laser beam mode button as often as necessary until the desired operating mode is shown in the display.
2. Select the desired operating mode:
   ◇ Constant beam
   ◇ Blinking beam

5.12 Adjusting the electronic bubble level
1. The bubble level appears in the display when the tool is turned.
2. Level the tool until the “bubble” is centered in the display.
   ◇ The LED begins to blink as soon as the tool’s compensation range is exceeded.

5.13 Fitting the screw feet and centering screw
   ▶ Fit the appropriate feet for the pipe diameter before setting up the laser in the pipe.

5.14 Setting the target plate size
   ▶ Set the target plate size in accordance with the diameter of the pipe.

5.15 Setting the % or ‰ unit of measure
1. Press the on / off button and the lock button at the same time.
2. Use the up / down buttons to move to the “Unit” line.
3. Press the direction button to select the value you wish to change.
4. Press the Set button and confirm the entry.
   ◇ The tool then returns to the normal operating mode.
5.16 Setting and activating the security code

1. Press the on / off button and the lock button at the same time.

   Note
   Unauthorized persons can be prevented from using the laser tool by entering a 4-digit security code. The user will be automatically requested to enter the code after the tool is switched on. Please note that once the security code has been activated, the laser tool can no longer be operated without entering this code.

2. Use the up / down buttons to move to the “Input S code” line.
3. Press the Set button to enter the correct mode.
4. Use the direction buttons and the up / down arrow buttons to navigate to the corresponding digit and then press the Set button to confirm. Select four digits in this way and confirm the code by pressing the Set button.
   ◦ The tool then returns to the previous mode.
5. The security code can be activated or deactivated by using the Set button to switch between on or off.
   ◦ The tool then returns to the normal operating mode.

5.17 Entering the name of the company

1. Press the on / off button and the lock button at the same time.
   ◦ The set values are shown in the display.
2. Use the up / down arrow buttons to navigate to the “Change name” line and then press the Set button to select the mode.
3. Use the direction buttons and the up / down arrow buttons to navigate to the corresponding character and then press the Set button to confirm. Press the Set button to confirm the name.
   ◦ The tool then returns to the normal operating mode.

5.18 Checking accuracy

1. Set the laser to an inclination of 0.000%.
2. Set up a leveling staff at a distance of 1 m (3.3”) from the laser tool and another leveling staff at a distance of 60 m (196.85”).
3. Make a note of the heights at which the laser beam strikes the leveling staffs.
4. Set up an optical level in the middle between the two leveling staffs and read the heights from both staffs.
5. Calculate the difference between the height readings from the optical level and the laser beam at staffs 1 and 2.
   ◦ If both values are identical, the laser tool is correctly adjusted.

   Note
   If the differences X1 and X2 are not within tolerance, please contact your local Hilti Center or representative.

6 Care and maintenance

6.1 Cleaning and drying

1. Blow any dust away from the lens.
   Note
   Do not touch the glass with the fingers.
2. Clean the tool.
   Note
   Use only a soft, clean cloth.
   If necessary, use a pure alcohol or a little water. Do not use any other liquids as these may damage the plastic parts.

6.2 Storage and drying

   ▶ Do not put the product into storage when wet. Allow it to dry before putting it away.
Observe the temperature limits given in the Technical Data section which are applicable to storage or transport of the equipment.

Check the accuracy of the equipment before it is used after a long period of storage or transportation.

### 6.3 Transport

**Note**

The batteries must be insulated or removed from the product before it is shipped or sent by mail.

Use the Hilti packaging or packaging of equivalent quality for transporting or shipping your equipment.

### 6.4 Adjustment through the Hilti Calibration Service

**Note**

Companies certified in accordance with ISO 900x require a valid calibration certificate for the measuring tools or equipment used.

After checking and adjustment, a calibration sticker will be applied to the laser range meter and a calibration certificate issued providing written verification that the laser range meter operates in accordance with the manufacturer’s specification.

### 7 Troubleshooting

If the trouble you are experiencing is not listed in this table or you are unable to remedy the problem by yourself, please contact Hilti Service.

<table>
<thead>
<tr>
<th>Trouble or fault</th>
<th>Possible cause</th>
<th>Action to be taken</th>
</tr>
</thead>
</table>
| E02/03 Internal error | ▶ Switch the tool off and then on again.  
▶ This error message may be displayed if the tool is moved or shaken. If this is the case, avoid movement. |
| E99 An internal memory problem has occurred. | ▶ Switch the tool off and then on again. |
| ERROR Moving the tool when in standby mode | ▶ Switch the tool off and then on again and check that it is set up correctly. |

### 8 Disposal

**WARNING**

**Risk of injury.** Hazards presented by improper disposal.

▶ Improper disposal of the equipment may have the following consequences: The burning of plastic components generates toxic fumes which may present a health hazard. Batteries may explode if damaged or exposed to very high temperatures, causing poisoning, burns, acid burns or environmental pollution. Careless disposal may permit unauthorized and improper use of the equipment. This may result in serious personal injury, injury to third parties and pollution of the environment.

Most of the materials from which Hilti products are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, your old tools, machines or appliances can be returned to Hilti for recycling. Ask Hilti Service or your Hilti representative for further information.

In accordance with the European Directive on waste electrical and electronic equipment and its implementation in conformance with national law, electric tools or appliances that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.
Disposal of electric tools or appliances together with household waste is not permissible.

9 Manufacturer’s warranty

- Please contact your local Hilti representative if you have questions about the warranty conditions.

10 EC declaration of conformity

Manufacturer

Hilti Aktiengesellschaft
Feldkircherstrasse 100
9494 Schaan
Liechtenstein

We declare, on our sole responsibility, that this product complies with the following directives and standards.

Designation: Pipe laser

Type designation: PP 10
Generation: 02
Year of design: 2016

Applicable directives:

- 2014/30/EU
- 2011/65/EU
- 2006/66/EC

Applicable standards:

- EN ISO 12100

Technical documentation filed at:

Tools approval department
Hilti Entwicklungsgesellschaft mbH
Hiltistraße 6
86916 Kaufering
Germany

Schaan, 6/2016

Paolo Luccini
(Head of BA Quality & Process Management / Business Area Electric Tools & Accessories)

Edward Przybylowicz
(Head of BU Measuring Systems / BU Measuring Systems)